SHARP SERVICE MANUAL

2TRC

DE4

(Photo: RD-620E)

MODEL
RD-620A
RD-620D
RD-620E
RD-620X

In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

SPECIFICATIONS

Type:	2 track monaural cassette tape recorder
Using tape:	Philips type compact cassette
Tape speed:	4.8cm/sec. (1-7/8 i.p.s.)
Recording system:	DC bias
Erasing system:	DC erasing
Output:	Dynamic power 700mW
Semiconductor:	1-IC (Integrated circuit)
	2-Transistor
	3-Diode
Frequency response:	150Hz ~ 8,000Hz
Input terminal:	Microphone (600 ohms 3.5mm dia.) x 1
	Record/Playback socket (DIN) (RD-620D)
	AC power input x 1
Output terminal	Earphone (8 ohms 3.5mm dia.) x 1
Speaker:	6.5cm (2-1/2") Dynamic speaker (8 ohms impedance)
Power source:	AC: 240V, 50/60Hz (RD-620E/A)
	AC: 220V, 50/60Hz (RD-620D)
	AC: 110 ~ 120/220 ~ 240V, 50/60Hz (RD-620X)
	DC: 6V (four UM/SUM-2, HP-11) (RD-620E)
	DC: 6V (four UM/SUM-2 batteries) (RD-620A, RD-620X, RD-620D)
Dimensions:	Width: 147mm (5-13/16")
	Depth: 263mm (10-5/16")
	Height: 50mm (2")
Weight:	1.1kg (2.4 lbs.) (without batteries)

SHARP CORPORATION OSAKA, JAPAN

CABINET REMOVAL

(Refer to Figure 2-1 and Figure 2-2)

1. Take out cassette from the cassette holder.
2. Turn over the recorder. Remove the battery compartment lid and take out four (4) batteries.
3. Remove five (5) cabinet bottom retaining screws. Return the recorder and remove cabinet top. If necessary, unsolder the lead wires connected to the speaker terminals. Remove the built-in microphone.
4. Remove two (2) screws retaining the power transformer. (Remove two (2) screws retaining the mains voltage selector switch. RD-620X only)
5. Unsolder the lead wires connected to the battery terminals.
6. Remove the AC power supply socket and cover.
7. Now, the cabinet bottom is ready for removal.

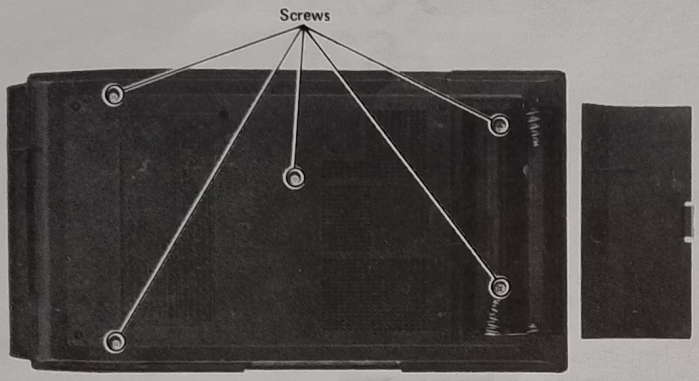


Figure 2-1 (Photo: RD-620E)

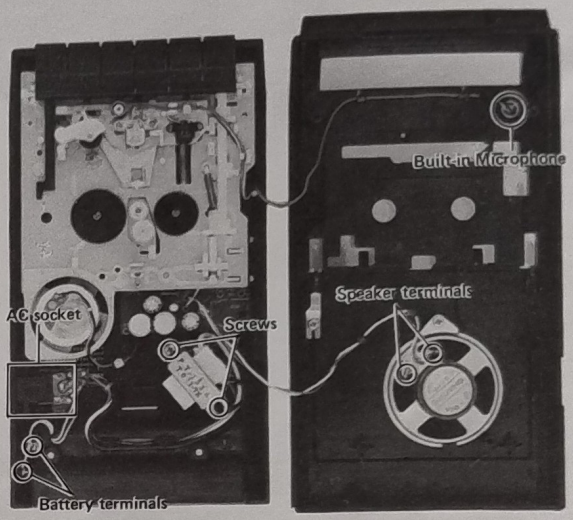


Figure 2-2 (Photo: RD-620E)

MECHANICAL ADJUSTMENT

RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

(Refer to Figure 2-3 and Figure 2-4)

1. Insert the test tape (MTT-113, 6.3kHz, −10dB Recorded)
2. Connect an 8 ohm (2W, 5%) dummy load resistor to EARPHONE jack and connect V.T.V.M. across, the load.
3. Adjust the adjusting screw so that the playback output voltage of the recorded tape becomes maximum.

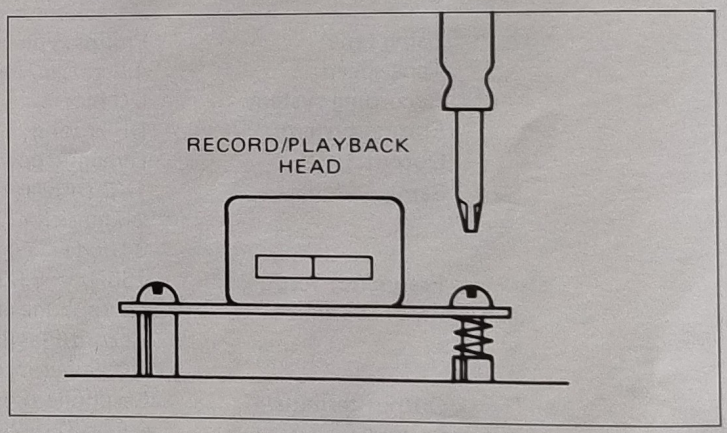


Figure 2-3

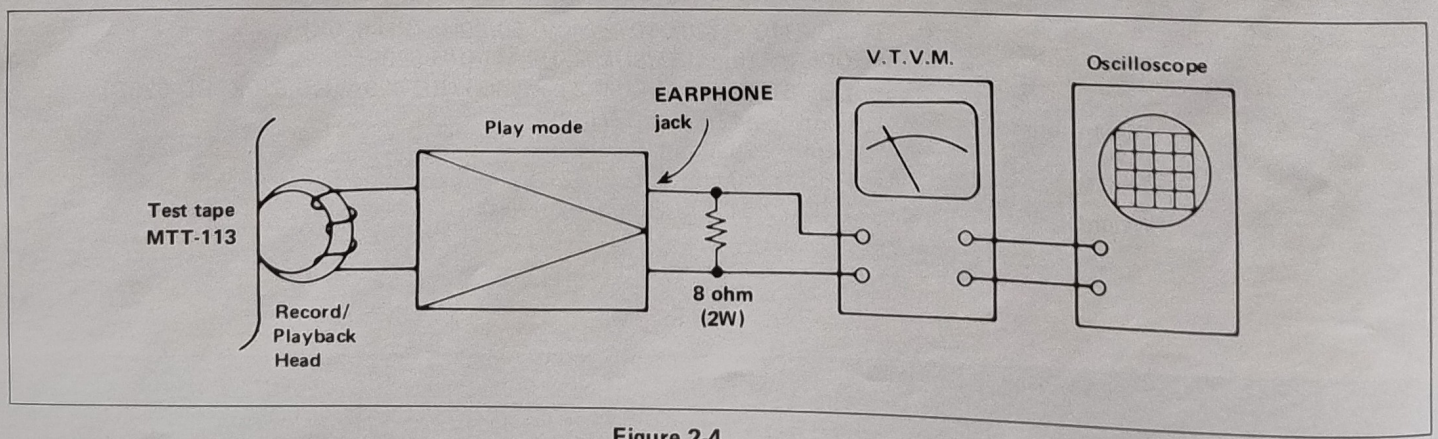


Figure 2-4

FLYWHEEL THRUST CLEARANCE ADJUSTMENT

(Refer to Figure 3-1 and Figure 3-2)

1. Slightly loosen two (2) screws retaining the flywheel bracket.
2. Adjust so that there is a thrust of 0.1 to 0.3mm between the flywheel bracket (thrust adjusting board) and the flywheel.

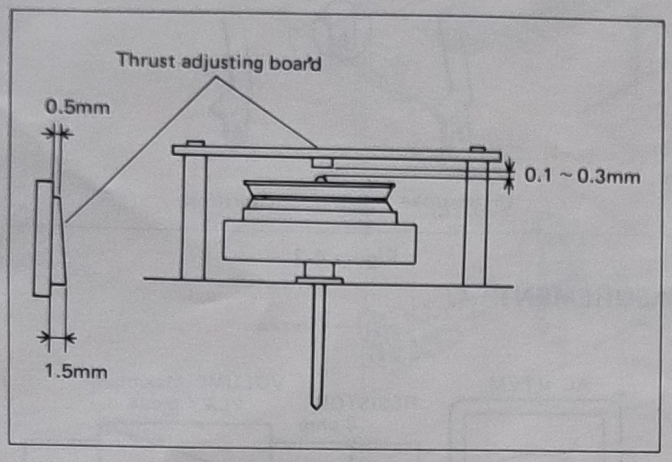


Figure 3-1

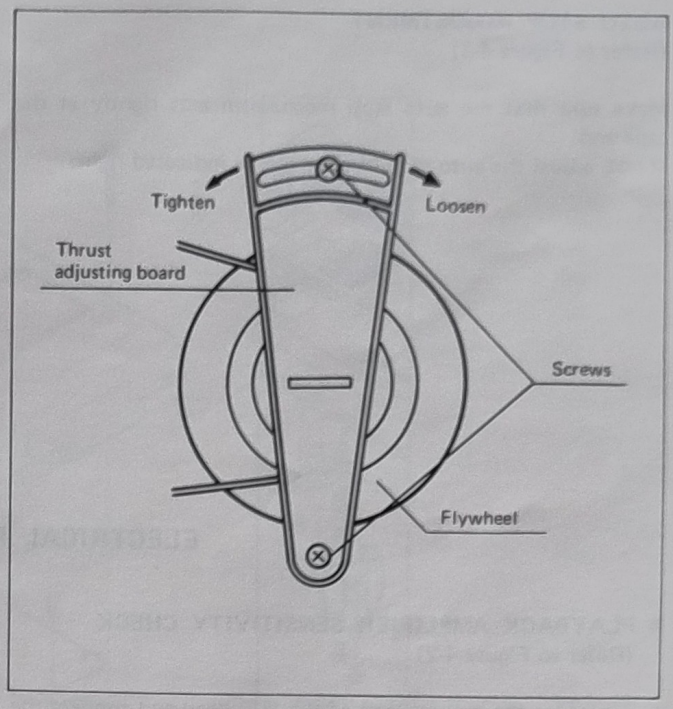


Figure 3-2

PRESSURE ROLLER PRESSURE ADJUSTMENT

(Refer to Figure 3-3)

1. With power supply turned on, push the point A with use of tension gauge to make the pressure roller apart from the capstan shaft. Then, gradually release the tension gauge and read its value when the pressure roller stops to rotate.
2. It is normal when the tension gauge reads 300 grams – 400 grams. If the above value is not satisfied, adjust the pressure roller spring.

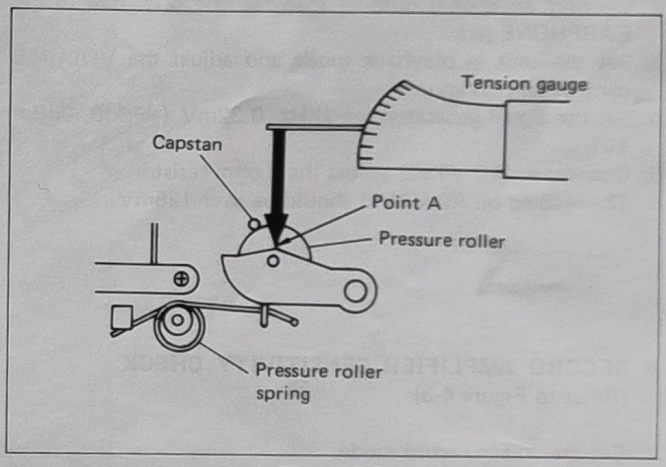


Figure 3-3

TORQUE CHECK

(Refer to Figure 3-4)

1. Set the torque measuring reel to the turntable (to the take-up side at play or fast forward mode and to the supply side at rewind mode).
2. Then, rotate the reel in the same direction as for turntable and read the torque value when the pointer is stabilized.

Mode	Torque Value
Play	35 – 60 gr.cm
Fast Forward	35 – 60 gr.cm
Rewind	35 – 60 gr.cm

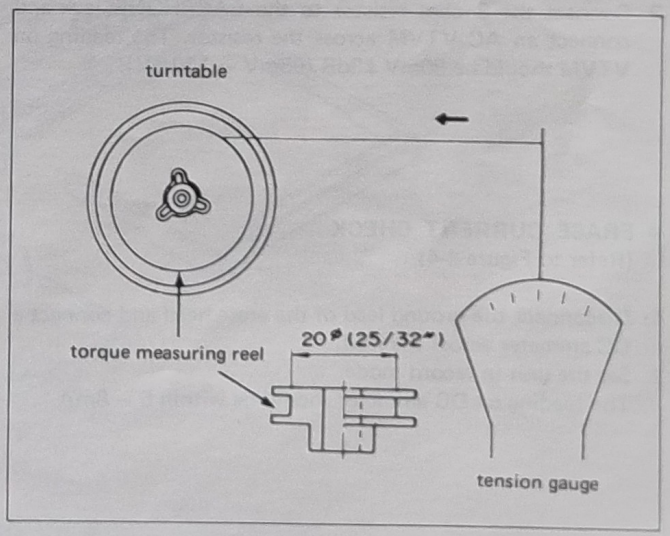


Figure 3-4

AUTO STOP ADJUSTMENT

(Refer to Figure 4-1)

Make sure that the auto stop mechanism acts rightly at the tape end.
If not, adjust the auto stop lever stroke as indicated right.

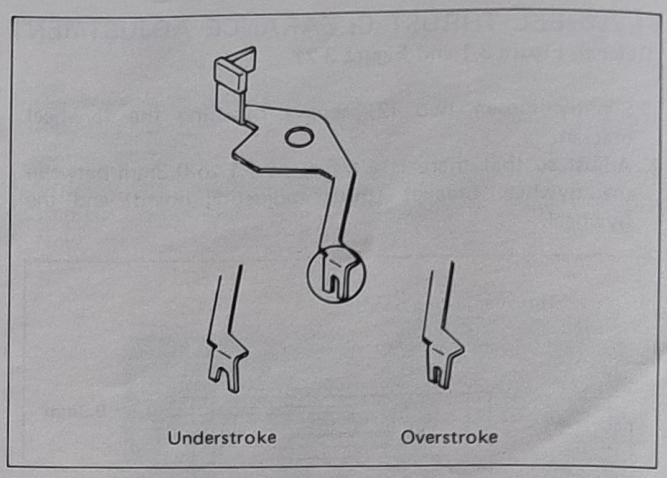


Figure 4-1

ELECTRICAL MEASUREMENT

■ PLAYBACK AMPLIFIER SENSITIVITY CHECK

(Refer to Figure 4-2)

1. Unsolder the ground lead of the R/P head and connect the signal generator across both ends of the lead.
2. Connect an 8 ohm dummy load resistor (2W, 5%) to the EARPHONE jack.
3. Set the unit in playback mode and adjust the VOLUME control for maximum.
4. Set the signal generator for 1kHz, 0.32mV (–70dB, 0dB = 1V).
5. Connect an AC VTVM across the 8 ohm resistor.
6. The reading on AC VTVM should be over 125mV.

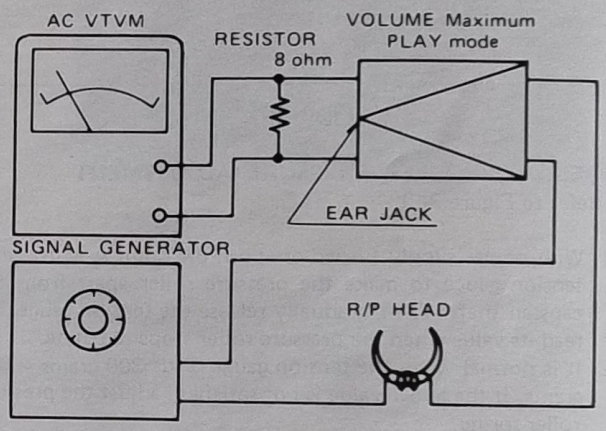


Figure 4-2

■ RECORD AMPLIFIER SENSITIVITY CHECK

(Refer to Figure 4-3)

1. Set the unit in record mode.
2. Connect the signal generator for 1kHz, 1mV (–65dB, 0dB = 1V) to MIC jack.
3. Connect the 8 ohm resistor to the EARPHONE jack and connect an AC VTVM across the resistor. The reading on VTVM should be 80mV ±3dB (55mV – 110mV).

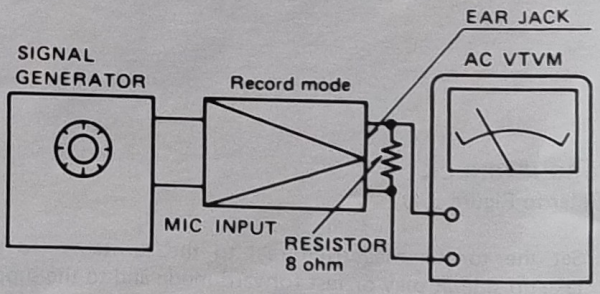


Figure 4-3

■ ERASE CURRENT CHECK

(Refer to Figure 4-4)

1. Disconnect the ground lead of the erase head and connect a DC ammeter across the lead.
2. Set the unit in record mode.
3. The reading on DC ammeter should be within 5 – 8mA.

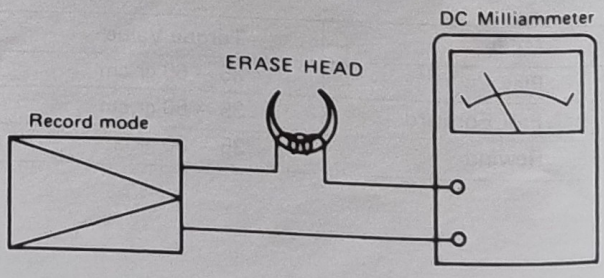


Figure 4-4

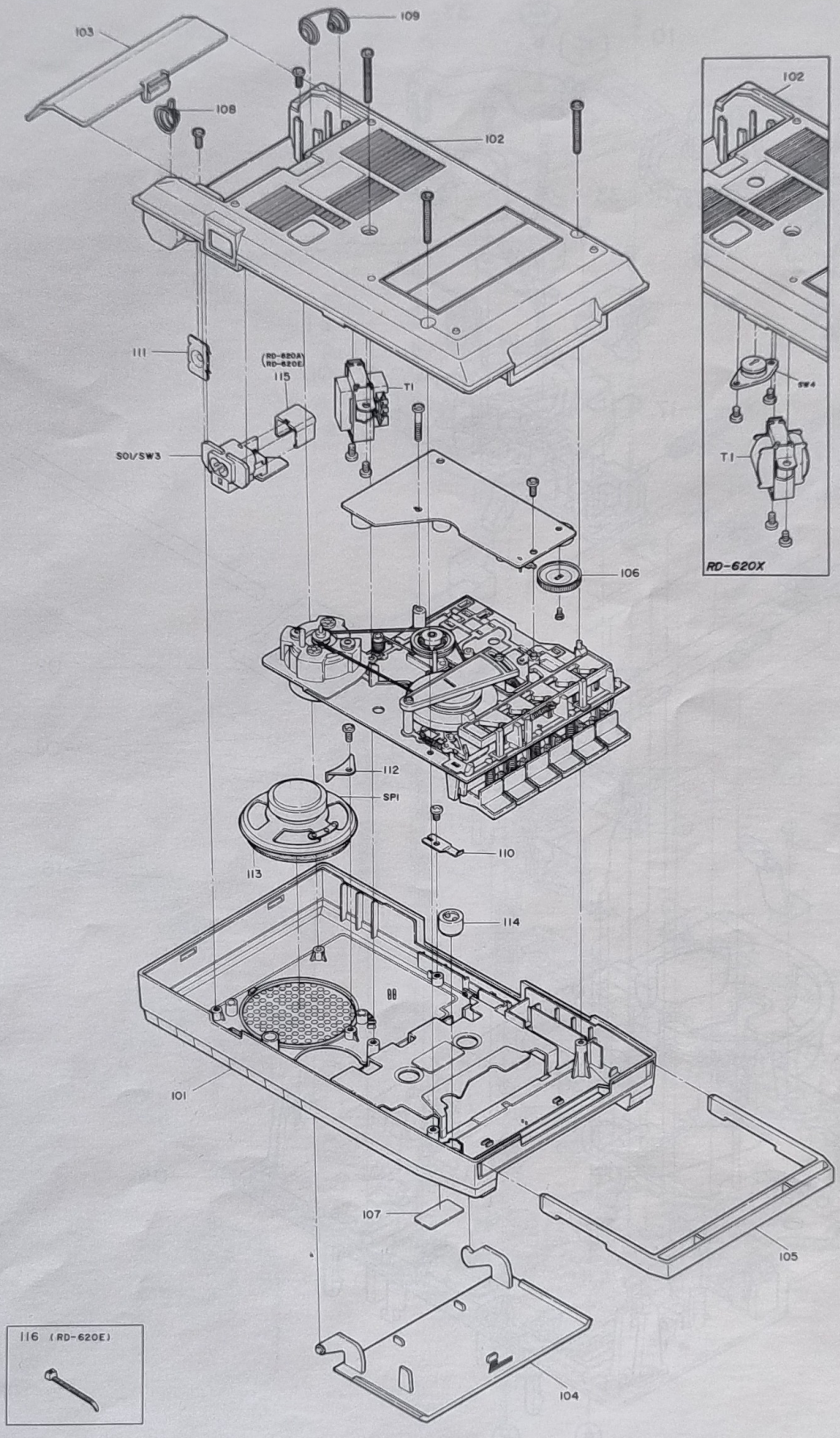


Figure 5 CABINET EXPLODED VIEW

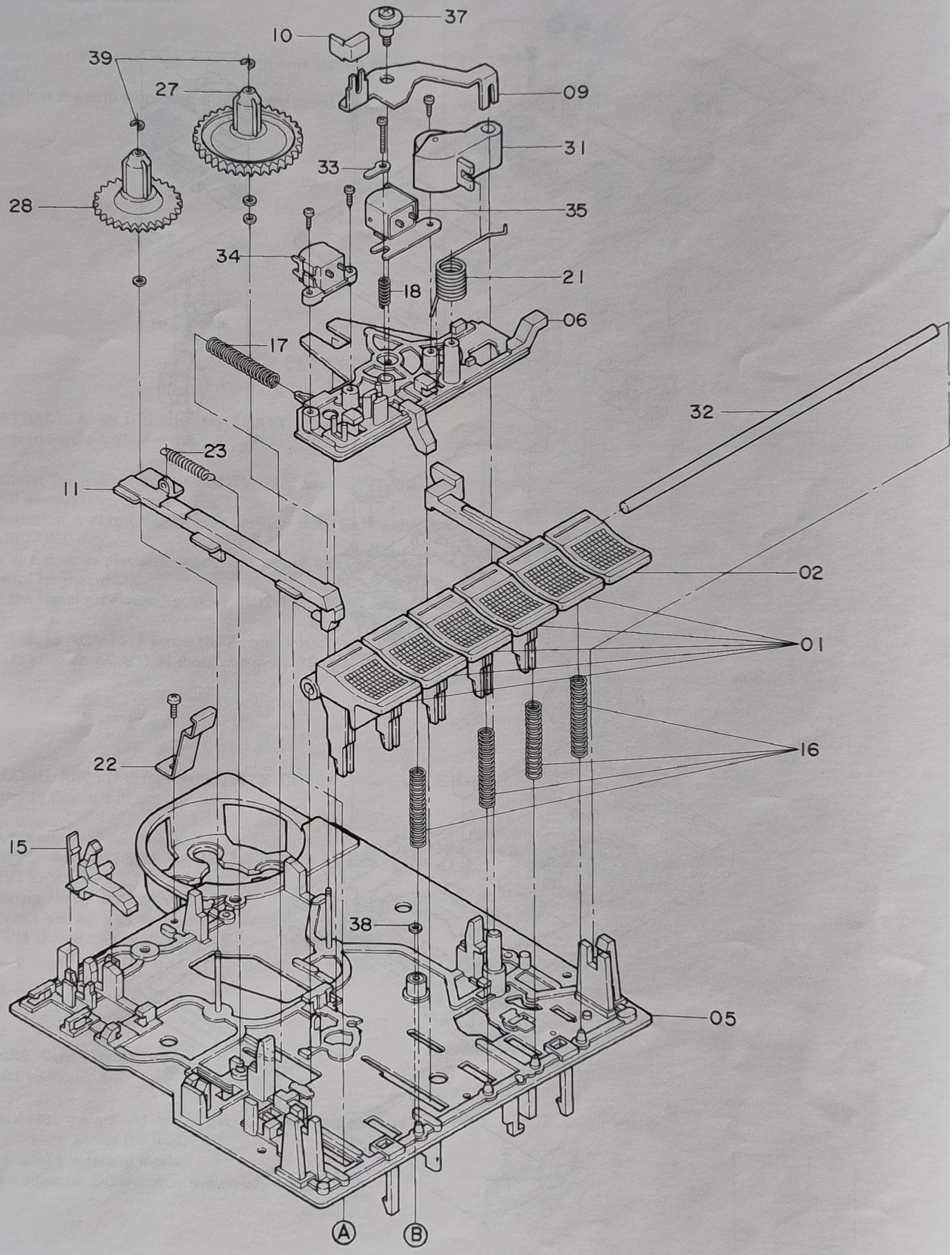
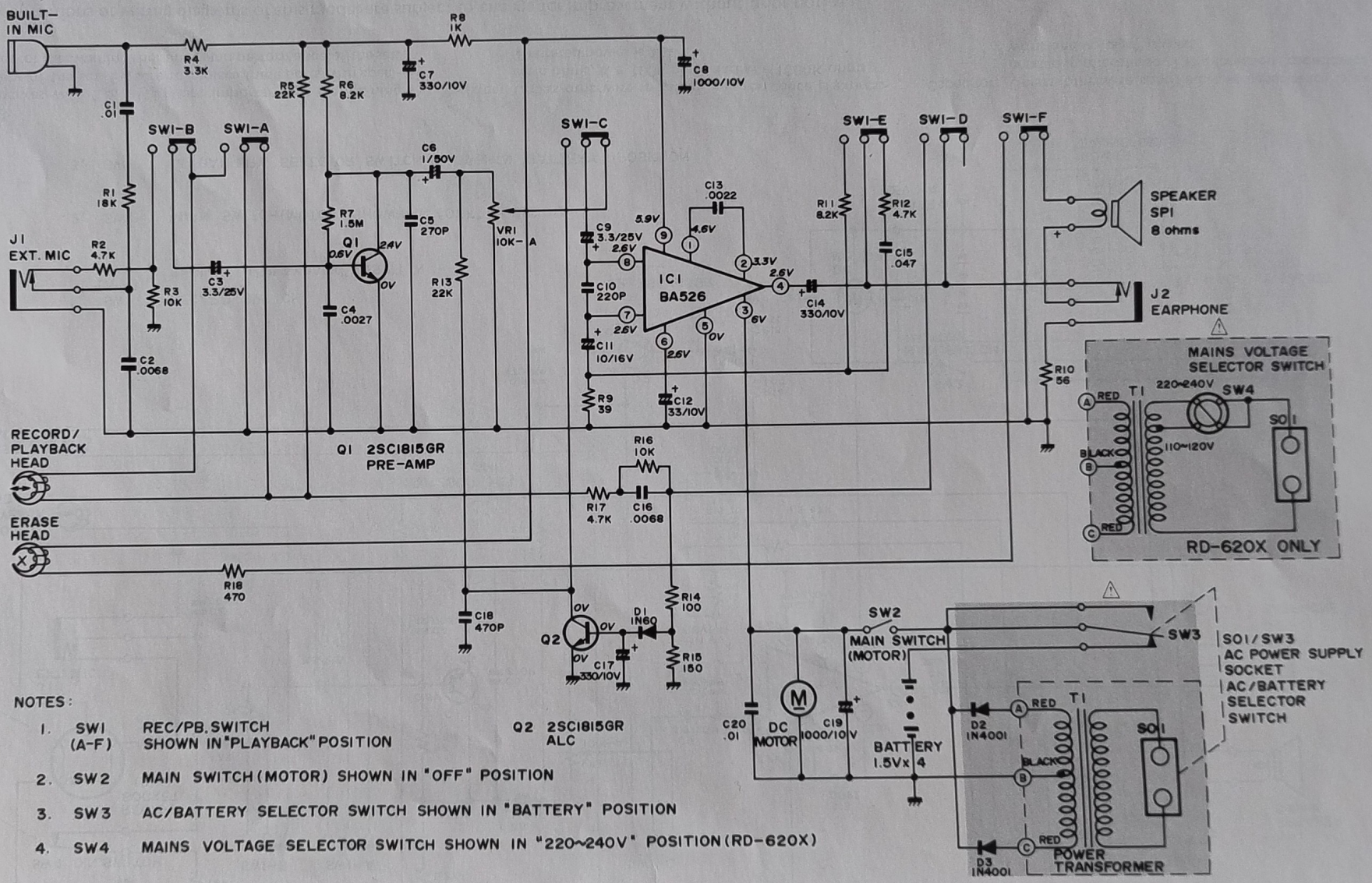


Figure 6 MECHANISM EXPLODED TOP VIEW



NOTES:

1. SW1 (A-F) REC/PB.SWITCH SHOWN IN "PLAYBACK" POSITION
2. SW2 MAIN SWITCH (MOTOR) SHOWN IN "OFF" POSITION
3. SW3 AC/BATTERY SELECTOR SWITCH SHOWN IN "BATTERY" POSITION
4. SW4 MAINS VOLTAGE SELECTOR SWITCH SHOWN IN "220~240V" POSITION (RD-620X)

Q2 2SC1815GR ALC

NOTES:
Parts markes with "⚠" ( ) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Resistor: Unless otherwise specified, any resistance is expressed in ohms. K = 1000 ohms and M = 1000K ohms. The rated power is 1/4W.

Capacitor: Unless otherwise specified, any capacitance is expressed in microfarad. The expression "capacitance/withstand voltage" is used.

Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.

Figure 7 SCHEMATIC DIAGRAM (RD-620A, RD-620E, RD-620X)

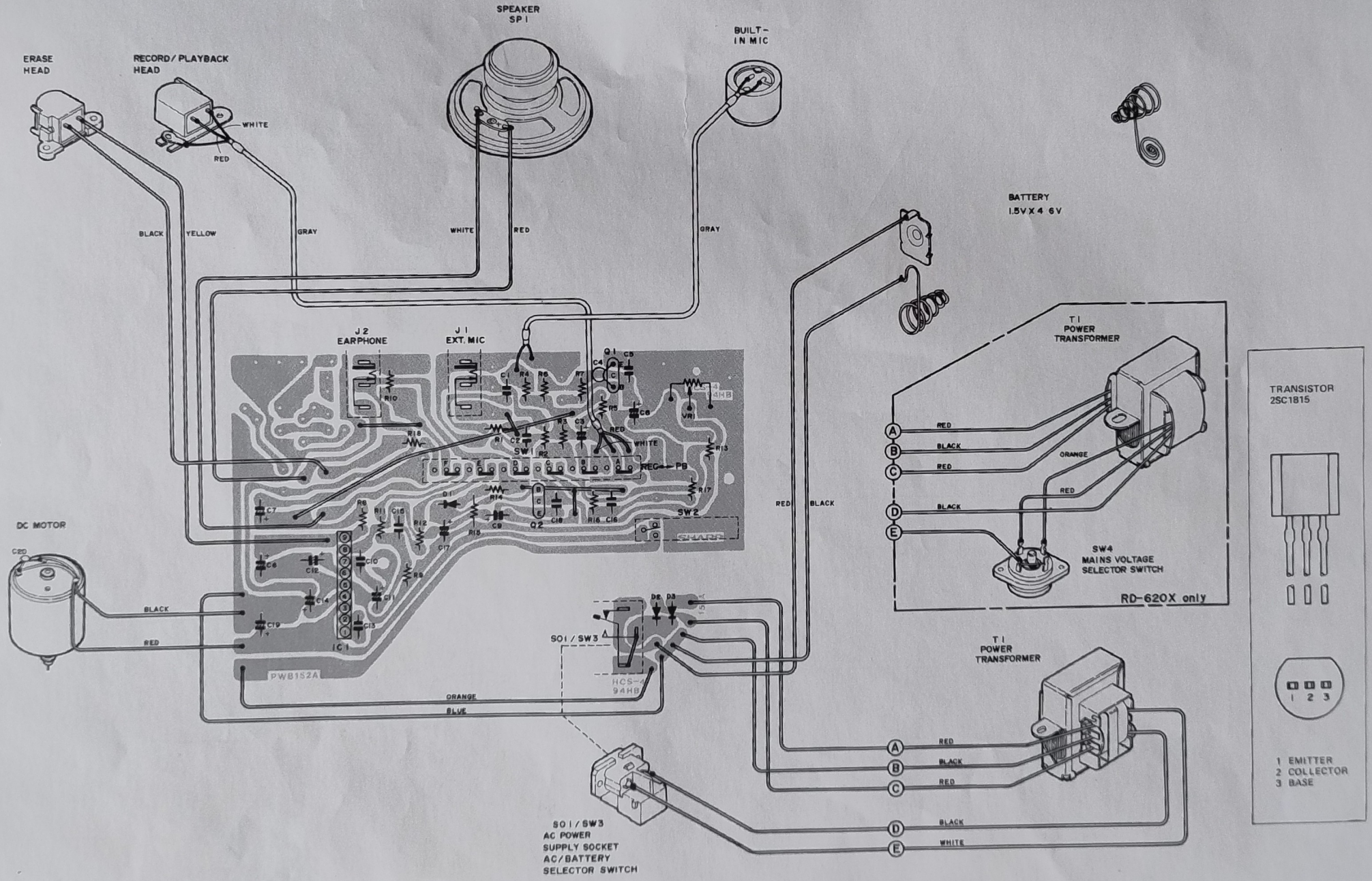


Figure 8 WIRING SIDE OF P.W. BOARD (RD-620A, RD-620E, RD-620X)

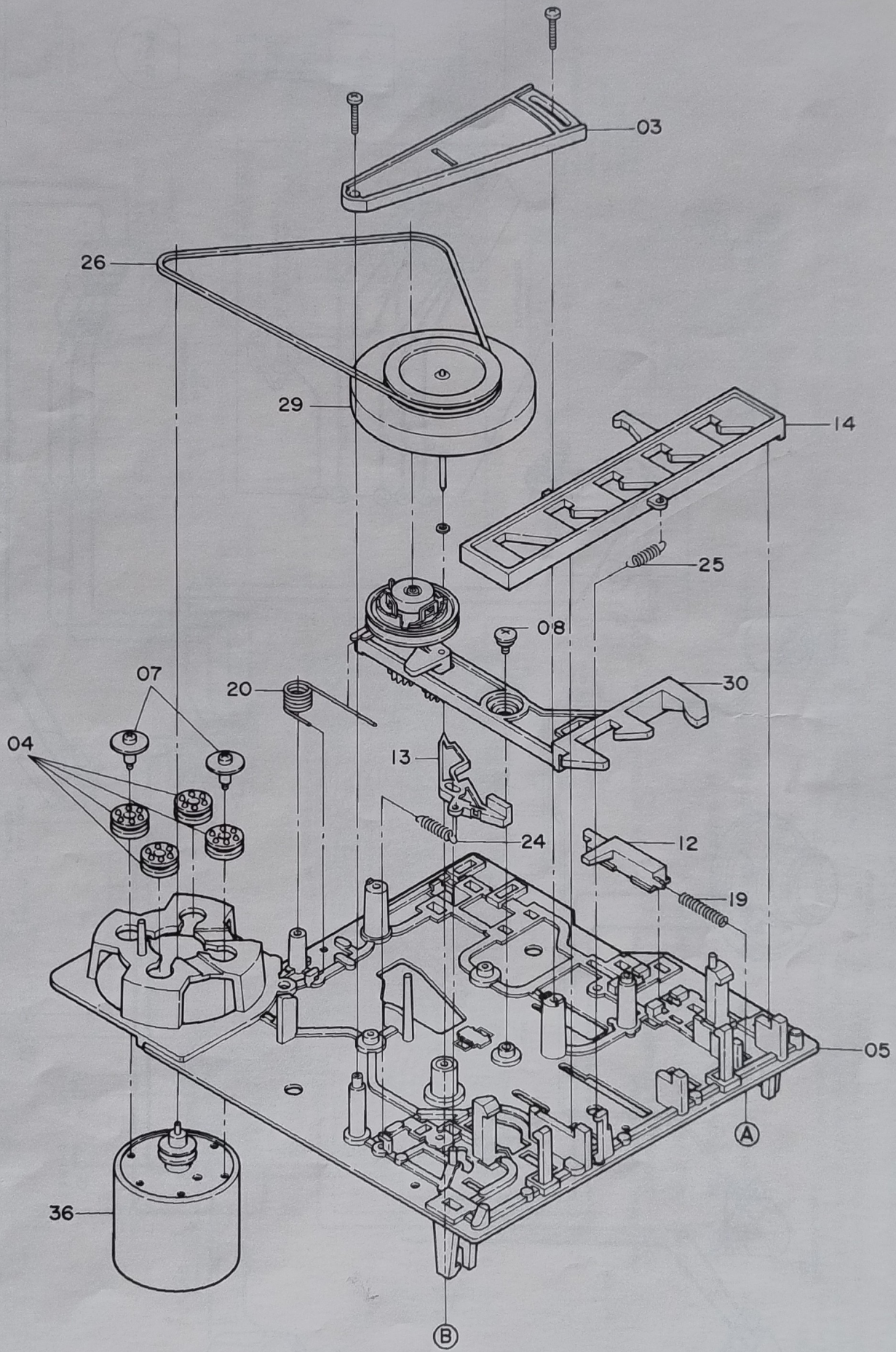
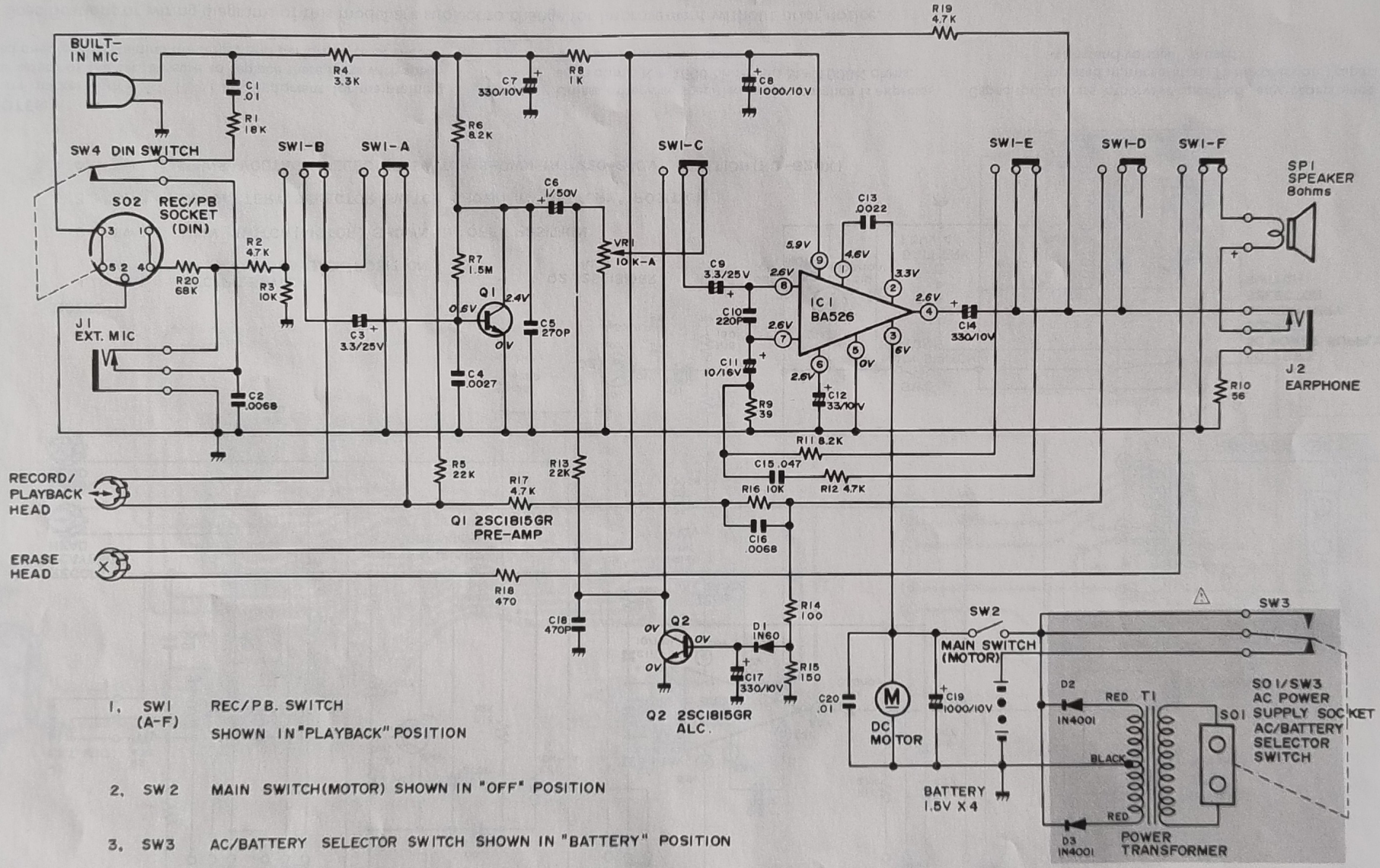


Figure 9 MECHANISM EXPLODED BOTTOM VIEW



1. SW1 (A-F) REC/P.B. SWITCH SHOWN IN "PLAYBACK" POSITION

2. SW2 MAIN SWITCH(MOTOR) SHOWN IN "OFF" POSITION

3. SW3 AC/BATTERY SELECTOR SWITCH SHOWN IN "BATTERY" POSITION

NOTES:

Parts markes with "⚠" ( ) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

Resistor: Unless otherwise specified, any resistance is expressed in ohms. K = 1000 ohms and M = 1000K ohms. The rated power is 1/4W.

Capacitor: Unless otherwise specified, any capacitance is expressed in microfarad. The expression "capacitance/withstand voltage" is used.

Specifications or wiring diagrams of this model are subject to change for improvement without prior notice.

Figure 10 SCHEMATIC DIAGRAM (RD-620D)

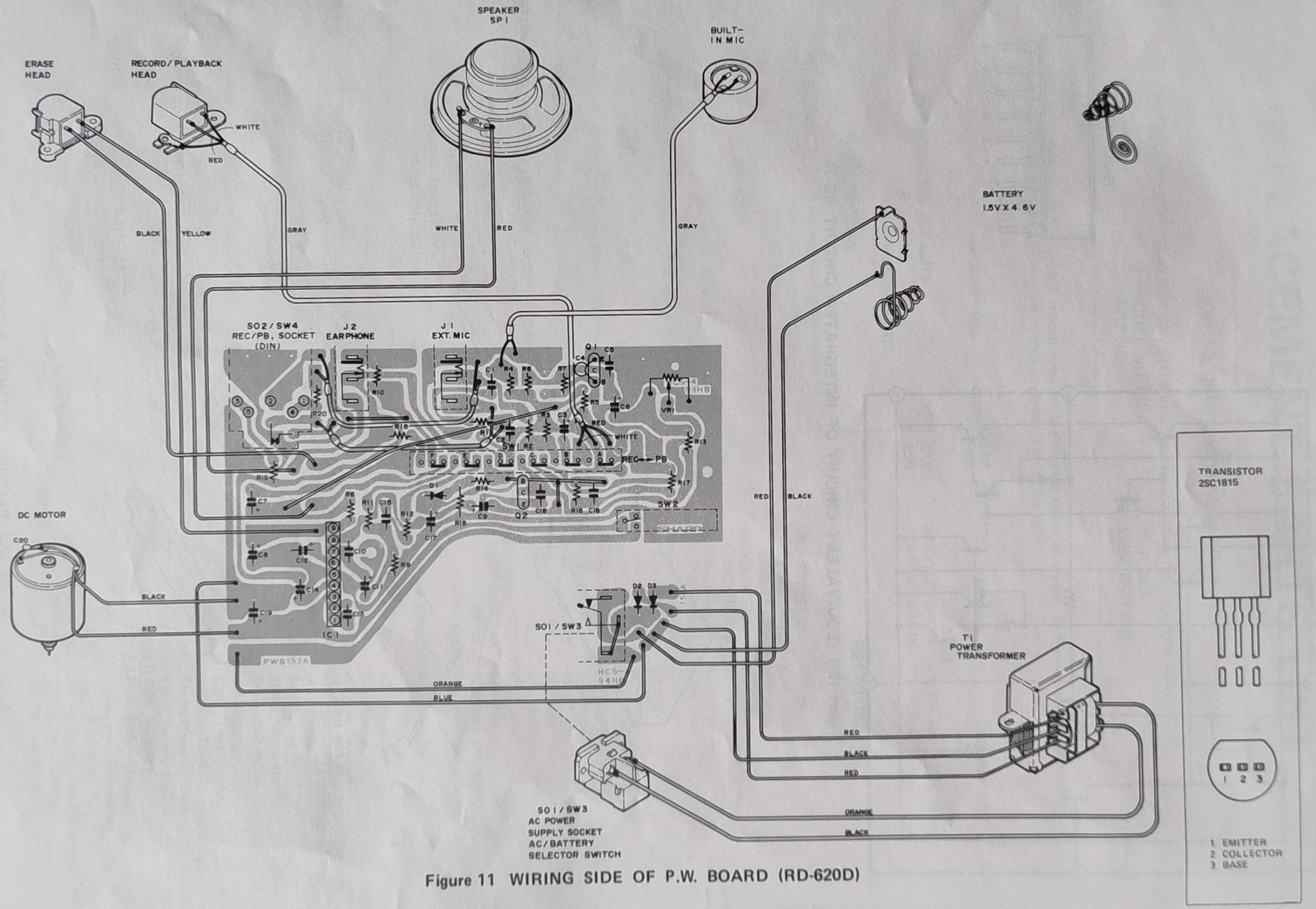


Figure 11 WIRING SIDE OF P.W. BOARD (RD-620D)

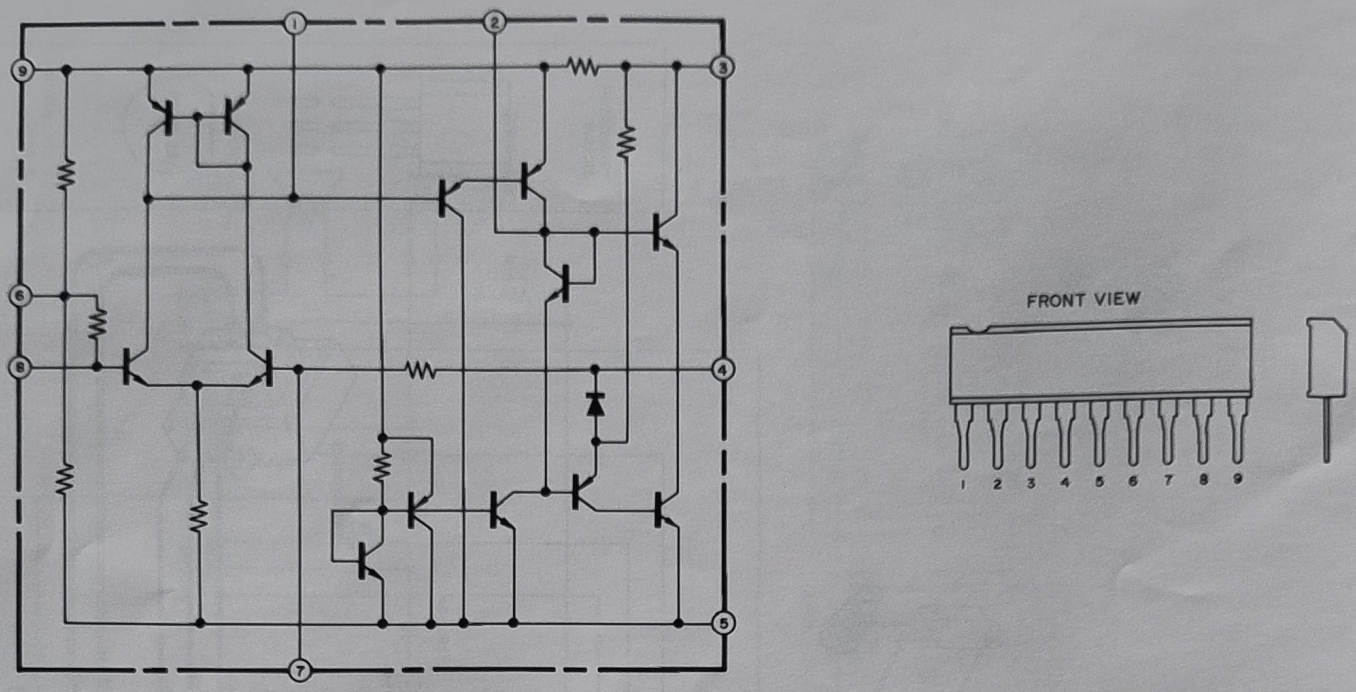


Figure 12-1 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT (IC-1)

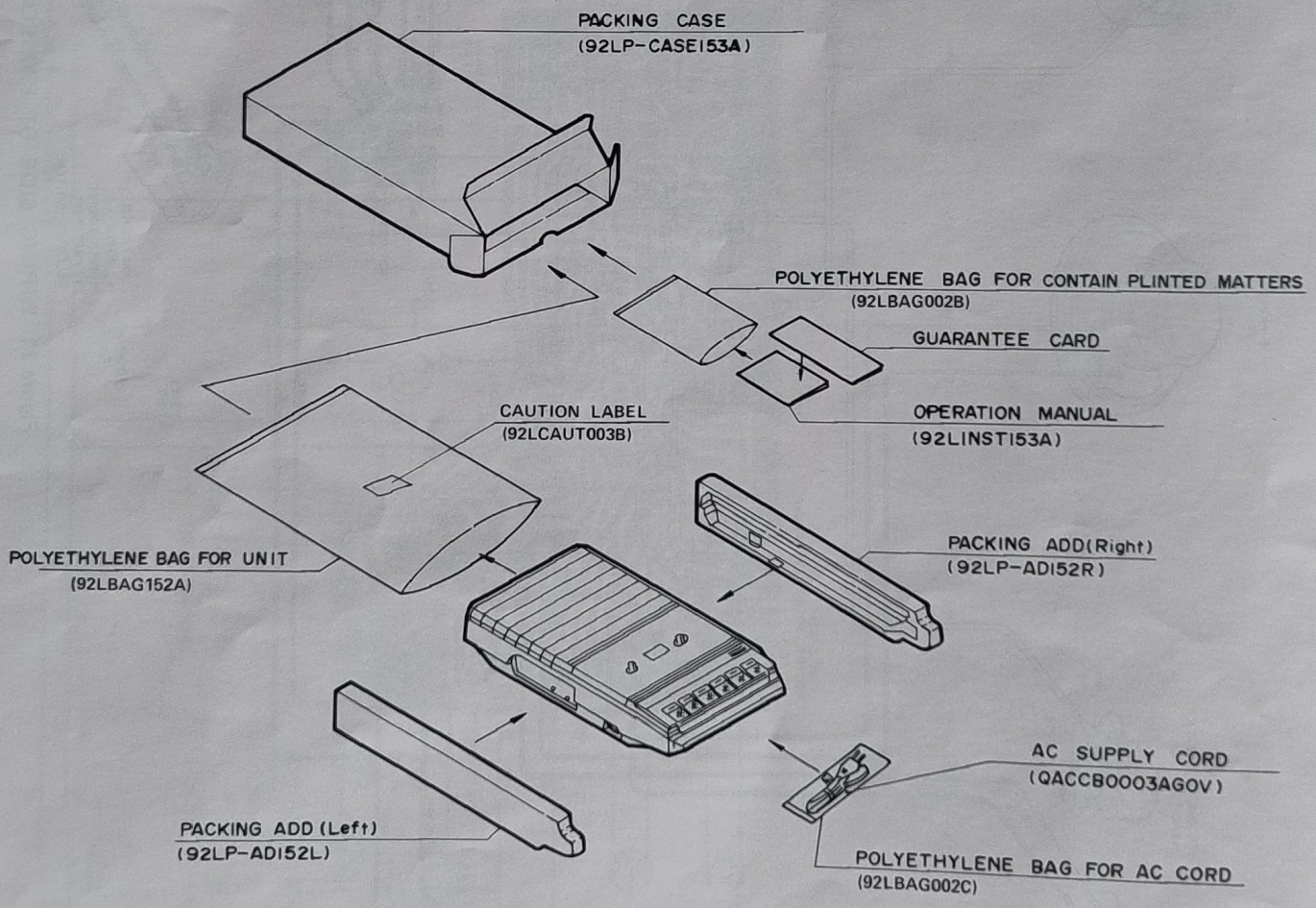


Figure 12-2 PACKING METHOD (RD-620E)

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. NO.
3. PART NO.
4. DESCRIPTION

NOTES:
Parts marked with " ⚠ " (▬) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

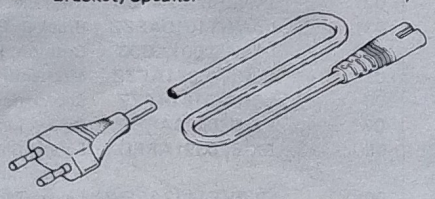
REF. NO.	PART NO.	DESCRIPTION	CODE
		INTEGRATED CIRCUIT	
IC1	92LIC-152A	Power Amplifier (BA526)	
		TRANSISTORS	
Q1	92L2SC1815GR	Pre-Amplifier (2SC1815GR)	
Q2	92L2SC1815GR	Automatic Level Control (2SC1815GR)	
		DIODES	
D1	92L1N60	Automatic Level Control (1N60)	
⚠ D2, 3	92L1N4001	Power Rectifier (1N4001)	
		TRANSFORMERS	
⚠ T1	92LPT-153A	Power (RD-620E/A)	
	92LPT-155A	Power (RD-620X)	
	92LPT-156A	Power (RD-620D)	
		CONTROL	
VR1	RVR-A0165AFZZ	10K ohm (A), Volume	AE
		ELECTROLYTIC CAPACITORS	
C3	VCEAAV1EW335A	3.3 MFD, 25V, +75 −10%	
C6	VCEAAV1HW105A	1 MFD, 50V, +75 −10%	
C7	RC-EZS337AF1A	330 MFD, 10V, ±20%	
C8	RC-EZS108AF1A	1000 MFD, 10V, ±20%	
C9	VCEAAV1EW335A	3.3 MFD, 25V, +75 −10%	
C11	VCEAAV1CW106Y	10 MFD, 16V, +50 −10%	
C12	VCEAAU1AW336Y	33 MFD, 10V, +50 −10%	
C14, 17	RC-EZS337AF1A	330 MFD, 10V, ±20%	
C19	RC-EZS108AF1A	1000 MFD, 10V, ±20%	
		CAPACITORS	
		(Unless otherwise specified capacitors are 25V, ±10%, Semiconductor type.)	
C1	VCTYPU1EX103K	.01MFD	
C2	VCTYPU1EX682K	.0068MFD	
C4	VCTYPU1EX272K	.0027 MFD	
C5	VCKYPU1HB271K	270 PF, 50V, ±10%, Ceramic	
C10	VCKYPU1HB221K	220 PF, 50V, ±10%, Ceramic	
C13	VCTYPU1EX222K	.0022 MFD	
C15	VCTYPU1EX473K	.047 MFD	
C16	VCTYPU1EX682K	.0068 MFD	
C18	VCKYPU1HB471K	470 PF, 50V, ±10%, Ceramic	
C20	VCKYPU1HB103K	.01 MFD, 50V, ±10%, Ceramic	
		RESISTORS	
		(All the resistors are 1/4W, ±5%, Carbon type.)	
R1	VRD-SU2EE183J	18K ohm	
R2	VRD-SU2EE472J	4.7K ohm	
R3	VRD-SU2EE103J	10K ohm	
R4	VRD-SU2EE332J	3.3K ohm	
R5	VRD-SU2EE223J	22K ohm	
R6	VRD-SU2EE822J	8.2K ohm	
R7	VRD-SU2EE155J	1.5M ohm	
R8	VRD-SU2EE102J	1K ohm	
R9	VRD-SU2EE390J	39 ohm	
R10	VRD-SU2EE560J	56 ohm	
R11	VRD-SU2EE822J	8.2K ohm	
R12	VRD-SU2EE472J	4.7K ohm	
R13	VRD-SU2EE223J	22K ohm	
R14	VRD-SU2EE101J	100 ohm	
R15	VRD-SU2EE151J	150 ohm	
R16	VRD-SU2EE103J	10K ohm	
R17	VRD-SU2EE472J	4.7K ohm	
R18	VRD-SU2EE471J	470 ohm	
R19	VRD-SU2EE472J	4.7K ohm (RD-620D)	
R20	VRD-SU2EE683J	68K ohm (RD-620D)	
		MECHANICAL PARTS	
01	JKNBR0181AFSA	Key, Function	AC
02	JKNBR0182AFSA	Key, Eject	AD
03	LANGT1010AFZZ	Bracket, Flywheel	AB
04	LBSHS0001AG00	Cushion, Rubber, Motor	AA
05	LCHSM0371AFZZ	Mechanism, Chassis	
06	LCHSS0162AFZZ	Sub-chassis	
07	LX-BZ0223AFFD	Screw, Motor Retaining	AA
08	LX-BZ0321AFFD	Screw, Slip Roller Assembly Retaining	AA
09	MLEVF1172AFFW	Lever, Tape Contact	AB
10	MLEVP0082AFZZ	Contact, Tape	
11	MLEVP0264AFZZ	Lever, Record Action	AB
12	MLEVP0265AFZZ	Lever, Switch Action	AA
13	MLEVP0266AFZZ	Lever, Auto Stop	AB
14	MLEVP0267AFZZ	Lock Plate, Function Key	AC
15	MLEVP0268AFZZ	Lever, Erase Prevention	AA
16	MSPRC0242AFFJ	Spring, Function Key	AA
17	MSPRC0243AFFJ	Spring, Sub-chassis Returning	AA
18	MSPRC0244AFFJ	Spring, Head Azimuth	AA
19	MSPRC0246AFFJ	Spring, Switch Action Lever	AA

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
20	MSPRD0337AFFJ	Spring, Slip Roller	AA
21	MSPRD0338AFFJ	Spring, Pressure Roller	AA
22	MSPRP0262AFFJ	Plate Spring, Cassette Returning	AA
23	MSPRT0751AFFJ	Spring, Record Key	AA
24	MSPRT0753AFFJ	Spring, Auto Stop Lever	AA
25	MSPRT0754AFFJ	Spring, Function Key Release Lever	AA
26	NBLTK0192AFZZ	Belt, Drive	AC
27	NDAIR0125AFSA	Turntable, Take-up	AC
28	NDAIR0126AFSA	Turntable, Supply	AC
29	NFLYC0093AFZZ	Flywheel	
30	NROLW0016AFZZ	Slip Roller Assembly	AK
31	NROLY0041AFZZ	Pressure Roller Assembly	AE
32	NSFTZ0076AFZZ	Shaft, Function Key	
33	QHWS-2222AGFN	Lug	AA
34	RHEDA0084AFZZ	Head, Erase	AE
35	RHEDG0058AFZZ	Head, Record/Playback	AK
36	RMOTM0097AFZZ	Motor, DC	AT
37	LX-BZ0304AFZZ	Screw, Tape Contact Lever	
38	LX-WZ9052AFZZ	Washer, Capstan Oil Cut	AA
39	LX-WZ9064AFZZ	Washer, 1.2mm Dia. x 3.2mm Dia. x 0.5mm	AA

MISCELLANEOUS

101	92LCAB152A	Cabinet, Top	
102	92LCAB153B	Cabinet, Bottom (RD-620E)	
	92LCAB154B	Cabinet, Bottom (RD-620A)	
	92LCAB155B	Cabinet, Bottom (RD-620X)	
	92LCAB156B	Cabinet, Bottom (RD-620D)	
103	92LLID152A	Lid, Battery Compartment	
104	92LCT-HOLD152A	Lid, Cassette Compartment	
105	92LHNDL152A	Carrying Handle	
106	92LKNOB152A	Knob, Volume Control	
107	92LMIRR113A	Decoration Sheet, Cassette Compartment	
108	MSPRC0237AFFN	Battery Spring, Negative	AB
109	MSPRC0252AFFN	Battery Spring, Positive/ Negative	
110	MSPRP0256AFFW	Plate Spring, Cassette Compartment Lid Opening	AA
111	92LBTML152A	Battery Terminal, Positive	
112	92LSUPT152A	Bracket, Speaker	
113	92LFELT152A	Felt, Speaker	
114	92LIN-MIC-152A	Built-in Microphone with Lead and Holder	
⚠115	PCOVW1100AFZZ	Cover, AC Power Supply Socket (RD-620E/A)	AA
116	LHLDW1075AFZZ	Nylon Band, 60mm (RD-620E)	AA
	QCNW-0994AFZZ	Connecting Cord Assembly (Erase, R/P Head)	AD
J1	QJAKE0065AFZZ	Jack, External Microphone (92LJACK-152A)	
J2	QJAKE0065AFZZ	Jack, Earphone (92LJACK-152A)	
SW1	92LSWICH-152B	Switch, Record/Playback	
SW2	QSW-F0158AFZZ	Switch, Main (Motor)	AF
⚠SO1/SW3	QSOCA0366AFZZ	AC Power Supply Socket and AC/Battery Selector Switch (RD-620A/X)	AF
	QSOCA0369AFZZ	AC Power Supply Socket and AC/Battery Selector Switch (RD-620E/D)	AF
⚠SW4	92LSWICH-124A	Switch, Mains Voltage Selector (RD-620X)	
SO2/SW4	QSOCD2554AFZZ	Socket, Record/Playback (DIN) (RD-620D)	
⚠	QACCB0003AG0V	AC Supply Cord (RD-620E)	AK
⚠	QACCL0050AF00	AC Supply Cord (RD-620A)	AM
⚠	QACCZ0050AF00	AC Supply Cord (RD-620X)	AK
⚠	QACCK0050AFZZ	AC Supply Cord (RD-620D)	
⚠	QPLGA0250AFZZ	Adaptor for AC Supply Cord (RD-620X)	AF
SP1	92LSP-152A	Speaker, 8 ohms	
	92LINST153A	Operation Manual (RD-620E)	
	92LINST154A	Operation Manual (RD-620A)	
	92LINST155A	Operation Manual (RD-620X)	
	92LINST156A	Operation Manual (RD-620D)	
	92LP-CASE153A	Packing Case (RD-620E)	
	92LP-CASE154A	Packing Case (RD-620A)	
	92LP-CASE155A	Packing Case (RD-620X)	
	92LP-CASE156A	Packing Case (RD-620D)	
	92LP-AD152L	Packing Add, Left	
	92LP-AD152R	Packing Add, Right	



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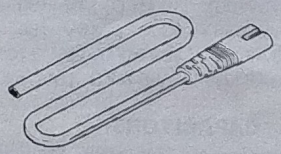

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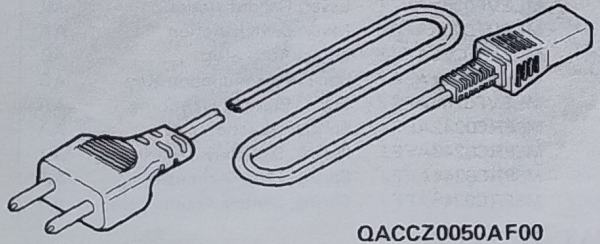

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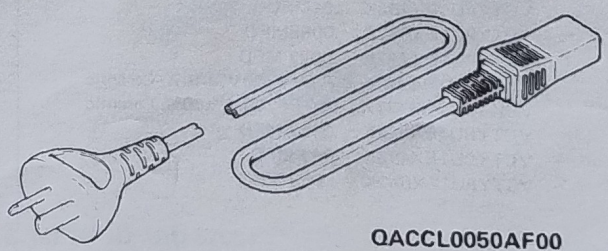

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